

1 **DELIVERY SYSTEM FOR LIQUID CATALYSTS**

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3 **ABSTRACT OF THE DISCLOSURE**

4 A delivery system for generating a sparging gas containing catalyst particles and
5 delivering them to a flame zone of a combustion reaction is disclosed. A catalyst mixture
6 receptacle for the delivery system includes a floating ball check valve on an air inlet to an
7 inlet tube of the receptacle which is spaced from a vertical wall of the receptacle. A
8 secondary splash chamber having an opening smaller than the body of the chamber is also
9 included between the main body of the receptacle and the sparging gas outlet for the
10 receptacle to reduce the opportunity for catalyst mixture in liquid form to reach the
11 sparging gas outlet. An enrichment circuit is disclosed including a controller, pump, and
12 a one-way check valve for adding additional sparging gas to a flame zone of a
13 combustion process in times of added load. The receptacle may be mounted with a
14 vibrator, such as the pump, to increase the consistency of the bubbles in the sparging
15 process. Alarms and indicators, including remote alarms and indicators, may also be
16 included to relay pertinent information regarding the delivery system. The sparging gas
17 may thereafter be pressurized and injected in particular applications.